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ABSTRACT

One of the ironies of recent years has been the concurrent development of a growing public budget for higher education and a widening chorus of people who can't see any reason at all for subsidizing it. The purpose of this paper is to summarize briefly the issues in the debate and discuss in some detail the more neglected aspects of the case. The case against any form of public intervention can be made as follows: (1) The only benefit of higher education is the enhanced power of the person who is trained. (2) Those benefits accrue in the form of higher realized earnings after training, and students know this. (3) Since scarce resources are used up in the training process, and since the benefits are known and will accrue to students, there is no reason not to charge full costs for the education and allow competitive markets to settle on the proper scope, extent of education, and distribution of its benefits. Fortunately, concerning public support, there are good reasons for and no empirical evidence against at least the following policy thrusts toward: (1) targeting existing subsidies at both federal and state levels on low-income students, (2) encouraging research and innovation in higher education, (3) building a higher education industry by encouraging moves toward relative prices that reflect relative costs and by improving management. (Author/PG)

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The Rationale for Federal Support for Higher Education

by **ROBERT W. HARTMAN**

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THE RATIONALE FOR FEDERAL SUPPORT FOR HIGHER EDUCATION

*Robert W. Hartman**

One of the ironies of recent years has been the concurrent development of a growing public budget for higher education and a widening chorus of people who can't see any reason at all for subsidizing it. The purpose of this paper is to summarize briefly the issues in the debate and discuss in some detail the more neglected aspects of the case.

The Case against Public Intervention

At its least subtle, the case against any form of public intervention can be made as follows:

- The only benefit of higher education is the enhanced earning power of the person who is trained.
- Those benefits accrue in the form of higher realized earnings after training, and students know this.
- Since scarce resources are used up in the training process, and since the benefits are known and will accrue to the students, there is no

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reason not to charge full costs for the education and allow competitive markets to settle on the proper scope, extent of education, and distribution of its benefits.

No one believes in this argument exactly as stated, but it highlights some of the crucial assumptions and beliefs underlying opposition to government intervention.

The "Proper" Role of Government

The first (and hidden) assumption of the above analysis is the presupposition that the government should take a passive role in the economy, unless specific reasons for intervention are adduced. More to the point, the antiintervention view derives from a belief that goods and services, including higher education, have no intrinsic merits beyond those that individuals, acting through free markets, would sustain. Government is simply a necessary evil that aids in the establishment of an environment in which such free choices can be expressed and individuals' utilities maximized. It is fair to say that almost all of modern welfare economics starts from this value position about the "proper" role of government.

There are, however, other views of the nature of the proper relation of the individual, economic goods, and the state that may lead to very different conclusions about government and higher education. These other views have found expression even in the United States.

First, there is the position that some goods are simply too important to leave their consumption to individual choice. The leadership of a democratic society may want to impose its preferences on the general public. When such goods are beneficial they are called "merit goods" (Musgrave, 1959, pp. 13–14) and when detrimental they are "illegal." (For example, in our society drugs and prostitution are goods and services whose consumption the nation does not allow to be regulated by consumer sovereignty.)

Second, economists are beginning to rediscover what political scientists and sociologists have long claimed: Society is (and should be) a collectivity possessing its own value orderings that are more than the sum of individual values. People may be willing in some cases to give up some freedoms to a government "which is charged to discover, articulate, and implement *social* priorities or collective wants" (Steiner, 1969, p. 27).

Third, although it is an accepted article of the conventional economic wisdom that redistribution of income is a legitimate concern of government, until recently economists have argued strongly that such redis-

tribution can most efficiently be implemented through cash transfers (including a progressive tax system). Recently, however, several arguments have surfaced that suggest that redistribution through provision of *specific* goods and services may yield higher returns to society (and be more politically feasible). The argument is simply that the *donors* may not be indifferent between a cash transfer of $X and the provision of $X worth of a specific service (e.g., education) to the receiving group. If the donor group feels that it gets more utility from specific redistribution, society as a whole may be better off by adopting programs that redistribute goods and services rather than cash (Tobin, 1970).

The problem with these types of analyses is that they too easily fall into the trap of justifying every form of existing government program ("If we've got it, that proves that people prefer it that way.") What is needed is research specifically designed to elicit whether American society really does value higher education as something special, something deserving of nonmarket treatment, when all the alternatives are understood. Do people want special treatment (and are they willing to give up the resources through taxation) for just some types of education (freshman studies, law school)? For just some parts of the population (blacks, middle class)? Barring some better knowledge of the social welfare function with respect to education, it is a mistake to go either to the extreme of tacit acceptance of a passive role for government or to acceptance of what we have because it's there.

Market Imperfections

For purposes of argumentation, we accept the passive role of government and will explore reasons for intervention based on that view.

Distribution of Income and Social Mobility

A laissez faire world may produce an income distribution that most regard as unfair. In that case a majority might accept government-supported social programs that promise to lead to a fairer distribution of income. "Free education" is often cited as one form of intervention that will operate to equalize incomes and thus make the distribution more fair. However, the theoretical case for equalizing incomes through increasing the amount of and equalizing access to education is not entirely unambiguous. Ignoring property income, education affects the distribution of income by changing the distribution of human capital. If the distribution of earnings can be divided up into a return on "raw labor" and a "return on human capital," the *dispersion* in earnings depends on the equality of distribution of each of these components, on the dispersion of returns in each category, on the relative importance of

each in determining earnings, and on the interaction of education and such factors as native ability. As education becomes more equally distributed, opposing forces are created:

- Human capital becomes more equally distributed and this reduces variability in earnings among different people.
- Human capital, however, in which the dispersion of returns is greater than for raw labor, may become a more important determinant of income and this causes earning to become *more unequal* (Thurow, 1971, pp. 18–20).
- If education adds relatively more to the incomes of more able people, greater dispersion in income can be expected.

Thus, even the simple question of whether more education will cause the distribution of income to become less dispersed requires empirical evidence rather than *a priori* incantation. Such studies are in their infancy, and the findings are always confounded by the many other factors that affect income and are difficult to control for such things as "ability" and "motivation" (Becker, 1967; Chiswick & Mincer, 1972).

Changing the distribution of income may be a very large order for public policy to undertake; others have suggested that higher education's redistributive function may be more limited: to provide a ticket of entry to upward social mobility for children from poor or near-poor homes (Hartman, 1972; Mundel, 1971). As certification requirements for "really good" jobs in our society increasingly involve a college diploma, the chances for entry into such positions for students from cash-poor or nonsupportive homes depend on their enrollment in college. Given that their demand is likely to be less for college (they don't have sufficient role models to emulate; there are strong pressures to contribute earnings to the family as soon as possible), some public means of lowering the net price of college to such groups is necessary to encourage them to enroll.

Some empirical studies have shown that poor kids do respond to lowered prices (Hoenack, 1971; Educational Opportunity Grants Evaluation, 1971). But the statistical precision of such studies is not sufficient to allow public policy to fine-tune enrollment rates, by any means.

It is often argued by spokesmen for higher education that uniform low tuition is justified on the grounds of enhanced social mobility. But such a position has been criticized in part on the grounds that the tax system used to support low tuition takes away more from the lower-income groups than it yields them in enhanced mobility (Hansen & Weisbrod, 1969). The empirical validity of this position has been chal-

lenged (Pechman, 1970), and the outcome of this debate now seems to be twofold:

1. To know who really pays for the upward-mobility effects of higher education, one has to know which taxes would be reduced (and on whom their final burden would fall), if low-tuition policies were curtailed (Hansen & Weisbrod, 1971).
2. Mobility cannot be given a dollar price in any conventional way; one has to evaluate separately the mobility consequences and the tax consequences before netting one out against the other (Hartman, 1970, 1972).

Thus, in designing public programs for the encouragment of upward mobility, public funds should be targetted on those whose demand for higher education is likely to be low as a result of cultural or environmental circumstance. In the present state of knowledge, the clearest case can be made for families with low income, especially minorities. Research on the effectiveness of education for the upward mobility of such groups needs to be undertaken, using, wherever possible, longitudinal data, so that characteristics of real people can be studied, rather than devoting research resources to squeezing information out of aggregated cross-sectional data.

Capital and Insurance Market Imperfections

In a society where slavery is prohibited, capital markets to support investment in education are necessarily limited. The free market in advanced societies provides capital for the businessman who wants to purchase a machine to enhance his firm's productivity or to the household that wishes to invest in a home. In each case the object of the investment can serve as collateral for the debt or as an asset behind the equity capital. The skills acquired by people in higher education cannot be so pledged to the providers of capital. The formation of human capital thus must overcome a special barrier—the failure of a capital market to develop to facilitate investment.

The importance of this barrier for public policy has been expressed in two different ways:

1. Some students see inequality of opportunity as arising from this source. Even if *demand* for higher education is equal for youngsters from all income classes (not unequal for lower classes, as argued above), the *supply* of funds for higher education would be unequal. Children from high-income families can benefit from their parents' ability to provide their own funds or to borrow

on their behalf, while students from low-income homes face much higher charges in the absence of a special market for human capital. Thus, equal opportunity can be served by the provision of a capital market that equalizes the supply curve of funds to all comers (Becker, 1967).

2. Forgetting equal opportunity and about who benefits or loses from the human capital market barrier, the efficient allocation of resources requires that marginal returns from all investment activities be equalized. Especially if one stresses the independence (of his family) of the college student, this implies that a capital market for all forms of human capital for all students be made equal to markets provided for physical capital, so that returns in the two sectors can be equalized (Zacharias *et al.*, 1967).

The public policy implications of these two views differ somewhat. In both cases, there is a case to be made for the government to intervene by acting as guarantor of educational loans; in this way, the government substitutes for the inability to repossess human capital. However, if one stresses the first view of capital market barriers—that it discriminates against poor families—a case can be made for limiting the governmentally aided loans to students from low-income families, perhaps through direct provision of such loans and/or regulation of eligibility (as in the National Defense Student Loan program). Under the second view, such limitations on eligibility are unwarranted: Anyone should be able to take advantage of the government *guarantee*. But in neither case is it necessary or justified for the government loans to be subsidized; interest rates should be left to the market once the government guarantee is in place. Similarly, there is no reason for the government to impose an artificially short repayment term designed to discourage borrowers (Hartman, 1971, Chapters 5 and 6).

Some rethinking of present educational loan policies is in order. We have to be clear about what goals are being served, whose needs are intended to be filled, whether control over beneficiaries is desirable, and what role below-market interest rates play. Present programs compromise on all these issues.

Risk to Borrowers

The federal government has gone a long way in providing more access to capital for higher education than would have existed without intervention. All the federally aided programs, however, (with the exception of a new program at Harvard University), are straight debt—the borrowers contract for fixed repayments after they leave school. Straight debt

still does not quite put education investment on a par with physical capital. In the business sector, an investor can pool risks by spreading his funds over several firms; indeed, the corporation itself is a way for investors, with limited liability, to pool risks. Even in the household investment sector, a family can insure itself against certain types of risks (e.g., fire insurance on a home). Higher education, viewed as an investment, certainly gives rise to an *a priori* need for risk pooling: The variation in rates of return is enormous. In principle, therefore, a market for insurance against low payoffs from education makes sense, and we can expect underinvestment in higher education until such markets are provided (Hirshleifer, 1966, p. 275; Nerlove, 1972).

Risk to Lenders

There are essentially two ways to provide insurance against low payoffs from higher education. The most straightforward is to offer "policies" that would subsidize those whose future incomes are low by charging "premiums" to those whose returns from education are high. There are two major obstacles to private, profit-making insurance firms entering this business. First is the problem of *moral hazard:* The purchaser of the insurance can so regulate his activity (by not working hard and thus earning a low income) as to avoid paying the premium. Second, and a more severe roadblock, is the possibility of *adverse selection:* The group of people choosing to insure themselves will turn out to be preponderantly "losers," and high-earners will stay away from the program. Faced with this possible outcome, private insurance markets would tend to be selective, trying to limit policies to "good risks" or risk-rating students. (Yale University is bearing the risk of adverse selection in its Tuition Postponement Program—not the banks who are lending to Yale.)

The absence of a private market for low-income insurance parallels the pre-Medicare status of the aged population: Any older person could buy private health insurance—provided he didn't get sick. In that instance, the risks were socialized by the introduction of a public program. A similar case can be made for public provision for low-income insurance for higher education loans. Instead of charging premiums to borrowers, the government could absorb the risks of low returns from higher education out of general tax revenues (Rivlin *et al.*, 1969, pp. 65, 70). Harvard University has taken a small step in this direction by agreeing to repay the student loans of its borrowers whose lifetime earnings are low (Harvard, 1972). But a very few institutions have the wherewithal to make such a promise, and some have argued that low-income insurance is primarily a governmental function (Johnstone & Dresch, 1971).

Much more needs to be known about how large a deterrent to higher education is the absence of a private insurance market. Even given the need for insurance, there are different degrees of it that can be offered (Dresch & Goldberg, 1972). The case for government-sponsored experimentation is very strong.

External Benefits

Another market imperfection that may require government intervention in higher education is the presence of external (to the student) benefits. Under certain circumstances it can be shown that if higher education creates benefits (pecuniary or nonpecuniary) that society values, but that the individual student does not receive or values less than society, some subsidy to the student may be required to insure the socially optimum level of investment in higher education. The opposite is also possible—that higher education creates benefits for individuals that exceed the social gain—and in that case some form of tax on higher education would be needed for optimal investment levels to be realized.

Very little empirical evidence exists on external benefits. Economists who analyze public policy toward higher education have shown an increasing tendency to regard the absence of good, hard quantified data in this area as indirect evidence that no such benefits exist (Friedman, 1968). This may be more a reflection of the deficiencies in the economists' education or the narrowness of their perspective: Some things in this world cannot be quantified. Howard Bowen (1970) compared the external gains of higher education to love, a phenomenon known to exist but never measured. While it is easy to deride such a claim as "special interest pleading"—it is often just that—the derision hardly constitutes counterproof.

Changes in Values and Attitudes

The greatest difficulty in evaluating the external benefits of higher education arises in the area of the alleged changes in values and attitudes caused by higher education. Educators, especially humanists, see higher education's major role as aiding in the creation of more "cultured" people, in Matthew Arnold's (1867, p. 55) definition of the term ("increased sweetness, increased light, increased life, increased sympathy"). To the humanist, sweetness and light is what higher education is all about. And there is little question that many parts of a typical college curriculum ("the liberal arts") cannot be explained as serving any other purpose than such cultural enrichment.

Not only humanists or special pleaders for higher education place

great emphasis on cultural payoffs to higher education: A recent survey of the 1950 graduating class of 74 different colleges asked respondents to indicate the areas in which they were "influenced or benefited" by college. Alumni response listed: critical thinking (73 percent said they were influenced "very much" or "quite a bit"); philosophy, culture, literary appreciation (62–63 percent); tolerance (56 percent); vocational training (42 percent). Students from 88 colleges, participating in the same survey, placed even greater emphasis on tolerance (80 percent) and on learning about other philosophies and cultures (69 percent) and even less emphasis on vocational training (40 percent) (UCLA Center for the Study of Evaluation, 1971).

Given that resources are used up in culture transmission, the questions for public policy are:

1. Is the signal heard? Do people really change their attitudes and values as a result of higher education?
2. Who benefits from such changed culture? Society in general? Is anybody hurt?
3. What is greater sweetness and light worth to the public at large?
4. Do we really need subsidies for greater culture, or is it a joint product of training that will be bought anyway? (See "The Need for Subsidies When Externalities Are Present," pp. 283–285.)

The Effects of the College Experience. Does college make a difference in the values and orientation of students? Research on this subject has recently been reviewed (Gurin, 1971; Berls, 1969; Feldman & Newcomb, 1969), and a brief summary will suffice here.

Students who matriculate and persist in higher education do come out as different people, and these differences continue in later life. But the data and research design of the studies do not permit one to feel very confident that these changes are produced by the college experience (as opposed to merely reflecting the socialization of students into changing values for all of society), nor to feel certain that the students in whom changes have been observed were not predisposed to such changes to begin with (that may be why they went to college in the first place, while their apparently "equal" contemporaries did not) (Gurin, 1971).

Given these caveats, highly educated students seem to show a greater openness, less prejudice, less tendency toward dogmatism; are more humanitarian and kind; and are somewhat less likely to believe that violence is necessary to produce change (Gurin, 1971, p. 28; Withey, 1971, p. 93) than others who did not attend college. Very little is known, however, about what aspects of the college experience produce these changes.

Is Attitude Change an Externality? If Jones "gets culture," what's in it for Smith? This is a key question in developing the argument for public support for higher education; it is not an easy question to answer. First, it may depend on who Jones is (was). If he suffered from the "lower-class" values and attitudes toward time and gratification as described by Banfield (1970), few would deny that Smith would benefit if Jones were to be transformed through higher education. (Smith would be willing, therefore, to pay part of Jones' educational bill.) But if Jones is merely changed in the sense that he now prefers Scotch to beer, foreign movies to bowling, opera to rock, the externalities depend on who Smith is! If he is a Scotch-drinking, movie and opera fan, he may benefit from the new Jones. If he is a migrant farmer, he couldn't care less (and wouldn't be willing to pay a nickel in taxes to support Jones' education).*

In short, there is no conclusive way to demonstrate whether such higher education attributes as attitude change benefit society as a whole or a few other educated people. Perhaps this can be demonstrated best by reporting a conversation between two university professors discussing just this subject:

> PROFESSOR A: What you are saying is that you would like to see more college graduates so that a larger part of the population will turn out to be like you. If you want that, "give to the college of your choice," but don't foist your tastes on the taxpayer. He's not sure he wants more of you.
>
> PROFESSOR B: Well put. When I went to college in the 1950s I was forced to read a 1946 essay by George Orwell. Two sentences in it ran as follows: "Thus political language has to consist largely of euphemism, question-begging and sheer cloudy vagueness. Defenceless villages are bombarded from the air, the inhabitants driven out into the countryside, the cattle machine-gunned, the huts set on fire with incendiary bullets: this is called *pacification*" (Orwell, 1946, p. 173). You are telling me that when I want more people to be exposed to such sentences in college, I do so only for selfish purposes? That the taxpayer has nothing to gain from a populace that listens to its political leaders through Orwell's ear? That I am selling a phony bill of goods? Nonsense.

It is hard for me to see how this debate can be resolved. But it is not trivial and the fact that no conclusions are reached on precisely who benefits from cultural externalities is not evidence that the claim is malarkey.

* It has been pointed out that attitude changes might result in Jones' voting for candidates who would be sympathetic to migrant farmers. The temptation is great to recall the story of the man who fed the horses so the birds could eat better. But it is conceivable that migrant farmers would be willing to subsidize Jones under these circumstances.

The Value of Cultural Externalities. Given that higher education induces higher cultural standards that are valued by the public at large, how much is it worth to them? This question is particularly difficult to resolve because "culture" has the character of a "pure public good": Once it is produced, "everyone" gets the benefit of it, and if I consume a little more of it, you don't have to consume a little less (Samuelson, 1954). Pure public goods cannot be traded in markets and priced, so we cannot get an objective measure of the marginal worth of the good. Thus, some other valuation procedure is required, in the same way that the value of national defense must be determined by nonmarket means. Although much work has gone into devising ideal voting procedures for valuing public goods (Johansen, 1965, Chapter 6), no feasible ideal has been discovered. In fact, when one takes into account the possibility that the current distribution of income (which may affect voter preferences) is not ideal, it may be impossible to define what the characteristics of an optimum would be (Aaron & McGuire, 1971).

In this country we leave these valuation decisions to the normal legislative process. That process can approach the ideal, whatever it may be, only if legislators are well informed as to what is happening with tax dollars and what the public thinks, and if the legislative process provides adequately for real choice to be exercised.

The federal government has a special role here in aiding colleges to modernize their budgeting and information systems (Newman *et al.*, 1971), strengthening the administrative capability of institutions (through such programs as the Higher Education Act, Title III, and especially Title V, part E) and rationalizing the federal budgetary process (for example, by providing for forward funding of student aid programs).

Other External Benefits

We have given first place in the discussion of externalities to attitude change and cultural enrichment because these are often slighted by quantitative researchers. Other external benefits that may be less important to alumni and students may be more amenable to quantitative analysis.*

Political Leadership. All of society benefits from the willingness of some people to exercise leadership roles in local, state, and national communities. There is plenty of evidence that college affects the willingness of people to play these roles (Withey, 1971, pp. 82–83). The social value of the increment in political leadership that we get from the last

* For a more comprehensive list of external benefits, see Bowen, 1971.

dollar of public subsidy to higher education is much more difficult to assess.

Learning at Home. There is some evidence that college-educated women may be better able to prepare their children for school. To the extent that society will bear the costs of public school education anyway, there is at least the possibility that subsidization of women college students may be a cheaper way to educate children than pouring resources into public schools to compensate for deficiencies in the home environment (Schultz, 1972). Research on this matter has yet to produce any conclusive evidence either way (Nerlove, 1972; Michael, 1972; Dugan, 1969).

Improving the Inflation–Unemployment Tradeoff. College-educated people enjoy unemployment rates well below the average (Manpower Report of the President, 1972). If their college training makes their labor market skills more adaptable (National Research Council, 1965), a case can be made that this should be considered an externality. While the individual benefits from a lower risk of unemployment, all of society benefits as well; the prospects for full employment without price inflation are enhanced whenever the labor force becomes more adaptable. Just as we support manpower retraining programs, the U.S. Employment Service, and antidiscrimination programs in labor and industry to shift the Phillips curve, so might we support higher education. To my knowledge, comparative studies of alternative methods of improving the inflation–unemployment tradeoff that analyze more support for higher education as a policy option have not yet been undertaken. Such a study would have to grapple with recent theoretical studies that deny that there is any long-term tradeoff between unemployment and inflation (Phelps, 1970; but see Tobin, 1972).

Interdependencies among Factors of Production. When Jones completes college, all the evidence seems to indicate that his wage rises. But the increment in his wage is not necessarily the full measure of the contribution of Jones' education to national productivity. Most studies of aggregate production functions show that the productivity of physical capital, for example, is enhanced when the labor force acquires more skills. This factor is often disregarded as being of second-order importance or as not unique to higher education investment. A recent study by Thurow estimates that "approximately 78 percent of the total gross returns [addition to GNP] to a 1 percent increase in the supply of educated labor will show up as increases in the returns to physical capital or as increases in the returns to uneducated labor"

(Thurow, 1971, p. 8). While this study cannot be regarded as definitive (no one has yet successfully estimated an aggregate production function that explicitly shows the returns to different categories of labor), it does suggest a fruitful field for further research and an important policy reminder. (Most existing studies of the returns from higher education *assume* that the observed average increases in wages of college-trained manpower accurately measures the marginal contribution to productivity. It may not.)

At the opposite pole from studies that claim wage differentials understate the productivity gains induced by higher education are those that claim earnings increases overstate the social economic benefit. One study (Taubman & Wales, in press) concludes that as much as half of the gain in earnings is attributable to a monopoly return to college-educated workers, not a real productivity gain. The monopoly return arises because college training is used by firms as a "screening device" to exclude less highly trained workers from high paying occupations. If such workers were not excluded, they would drive down the wage of the high-paying occupations. Much more work could be done in pursuing the relation of job requirements and education.

Research. The case for public support of research is discussed at length elsewhere (Kaysen, 1969). The basic argument is that the production of new knowledge yields returns that cannot usually be captured by the person making the discovery. Thus, if society wishes to encourage new knowledge production it must support research directly.

In the field of educational research, an especially strong case can be made for federal support, even though the federal government is not the major source of funds to education in general. Educational services in this country are predominantly provided by not-for-profit organizations, in which the incentive to innovate is small. Moreover, the typical firm (decision unit) in the education industry is often too small to support a research program of any magnitude. Thus, research in general, and in education specifically, is universally recognized as an appropriate area for federal involvement. The federal budget shows the effects of this commitment (Special Anayses of the Budget of the U.S. Government, Fiscal Year 1973, 1972, Appendix R).

The Need for Subsidies When Externalities Are Present

The mere existence of external effects of higher education is not sufficient to make the case for public subsidies. First of all, higher education may produce large and valuable external benefits in the aggregate, but if the marginal external benefit is small, the case for subsidy is weak.

Second, to the extent that institutions would be willing to provide externality-producing activities and students would be willing to engage in such activities *without subsidy*, society can gain the externalities (get a "free ride") without intervention. Such a "free ride" would come about, for example, if (a) many students are now receiving a pure rent from higher education subsidies and would be willing to attend, persist, and take the same courses even if full costs were charged to them; and (b) institutions would offer the same package of courses in an environment where courses were priced at cost and sold to buyers. In this case, the externalities of higher education would be jointly produced with the private benefits, and society at large would lose nothing from abandoning subsidies.

The study of the effects of subsidies on the process of education is in a prenatal state. The recent financial difficulties of colleges offer some chance to observe what happens when funds are cut back, which may be indicative of how institutions would react to a fully market-oriented higher education world. The evidence seems to be that neither research nor the core of what most people would regard as a liberal arts education—the parts of the educational process that would seem most likely to produce externalities of the various types discussed above—is what institutions cut back on (Inner City Fund, no date). However, these short-run responses are dominated by budget exigencies and may not reflect long-run responses. In fact, some of the short-run responses—reducing teaching loads in the face of greater financial pressures—seem positively perverse (Cheit, 1971, pp. 83–90; Columbia Research Associates, 1971).

Only fragmentary evidence is available on how students would react to a withdrawal of subsidies. One interesting piece of evidence is the reported responses of Educational Opportunity Grant recipients in private universities to the question of what they would have done had they not received the subsidy. While a fairly small percentage would not have enrolled (24 percent), a very large number (51 percent) claim they would have attended other, presumably cheaper, schools (Educational Opportunity Grants Evaluation, 1971, p. 96). Cheaper institutions, by casual observation, tend to be more vocationally oriented and least supportive of the liberal arts.

While it is a near-certainty that some students would not change their educational behavior at all if subsidies were withdrawn, there is no evidence that this reaction would be, by any count, universal. And while many institutions may react in the short run to loss of outside support in seemingly educationally irrelevant ways, there is no evidence to support "business as usual" if large-scale, long-term withdrawals of

third-party payments occurred. We do not know whether subsidies are necessary to support the externalities of higher education.

Sharing the Governmental Burden: The Federal Role

Most of the writing by economists in the public finance of higher education field has treated "the government" as one unit and drawn policy inferences for whatever particular level of government the study was addressed to. The federal nature of the support system has been all but ignored. In part this is due to the nonapplicability of orthodox economic theorizing to our present system of financing.

Orthodox public finance theory has two contributions to make to the question of what level of government should shoulder what burden:

1. *Spillovers.* If external benefits of higher education exist, and if the external gains can be divided geographically, the subsidies should be granted by the different governmental levels in proportion to the gains accruing in each geographic region (Break, 1967). Thus, if 1 unit of freshman studies for a white, low-income male in West Virginia yields 3 units of benefit to West Virginians and 7 units to non-West Virginians over and above the private gains, the state of West Virginia should contribute 30 percent of whatever subsidy is granted.

The nonrelevance of this analysis is due to our inability to measure external benefits, much less to identify their spatial incidence. (As indicated above, some people have compared the external benefits of higher education to "love." The correlate here is "Love, your magic spell is everywhere.") Some studies have attempted to measure external benefits of education by studying migration patterns of former students and observing their incomes and tax payments to establish whether the particular units of government are recouping their investment (Weisbrod, 1964). But where one lives has no necessary relation to the locus of the external benefits; one's income has no necessary relation to the external benefits one creates; and one's tax payments are irrelevant to rational government policy. (If governments tried to maximize the excess of tax receipts over subsidies, they would give preference to those with the highest marginal tax rates: the very rich!) Some analysts have used the very high mobility of people with graduate and professional training as an indicator of the need for federal subsidization of such studies, for example, in medical training (Fein & Weber, 1971). But these studies rarely (never, to my knowledge) demonstrate who enjoys the external benefits of such training, which would be necessary to make the analysis correspond to the theory.

2. *Redistribution.* It is simple to demonstrate that a variety of distor-

tions will be introduced into the economy when lesser (state or local) goverments undertake redistributive programs. If nothing else, such policies may cause the concentration of people of similar circumstances. (Welfare-eligibles move to New York City and others move out). Moreover, states with the greatest need for redistributive policies are least fiscally able to cope with the problem. (Among all states, Mississippi's government has the weakest fiscal capacity to grant aid to poor Mississippians.) Thus, redistributing income or redistributing access to higher education towards low-income groups should be a national responsibility, with the necessary aid being provided from Washington.

The trouble with this particular point is that we are not starting from scratch in financing higher education. If we were, it would be quite clear that a sensible structure for higher education financing would have the federal government emphasizing equalization programs with the states assigned such tasks as supplementary student aid (for high-cost states or institutions) and a major role as innovators or providers of lighthouse institutions. History has not worked out that way; the federal government cannot ignore the states' choice to directly provide higher education to the masses through low-charge public institutions. This has created a higher education market with private institutions put at an ever-growing disadvantage as their charges grow more rapidly than state-supported low tuition.

The federal government has been responsive to the growing difficulties in the private sector, as is shown in the overrepresentation of private institutions in the major Office of Education student-aid programs. Recent attempts to introduce a more rational, fairer, national student aid program were distorted by Congress, at least in part on the basis that it would not provide the differential aid required by the private sector. Similarly, the move toward giving special benefit to small institutions of higher education (predominantly private) in the institutional aid title of the 1972 higher education legislation was a reflection of the recognition of private education's needs (Hartman, 1972b). These compromises would make little sense in a rational policy world, but given the irrationality of state finance practices, such programs have considerable political appeal.

The analytical work in public policy required in this field is to uncover alternative ways by which the federal government can induce states to change their financing policies so that the joint action of state and federal policies attain the governments' objectives. On these grounds we need further analysis of whether the federal government should require states to put forth at least a minimum level of effort in support of higher education in order to benefit from federal programs (Carnegie

Commission on Higher Education, 1971), whether the federal government's matching of state scholarship support programs might be a more effective instrument (Education Amendments of 1972) or whether federal institutional aid programs can be designed to give incentives for state financial reform (Kirschling & Postweiler, 1971), etc.

The role of the federal government here is that of providing incentives for state governments to pursue better systems of support. Given the size of state support programs, such an emphasis may be more effective than federal programs that try directly to achieve governmental objectives. It also may not be. In any event, it is important not to ignore the existence and possible transformations of state support policies in assessing the federal role.

Other Institutional Justifications

The preceding discussion of federal incentives for state financial reform has brought this review out of the realm of the "optimal system" of federal support and into the fuzzier world of "second best." (Given some barrier to perfection, what is the best policy in a second-best world?) Two other cases where federal support may be justified because of institutional factors are in the areas of research and manpower.

Research

The section on externalities dealt with governmental support of research. The obvious way to support research is directly: The government should buy research services of people and firms who do research. In principle, such research support need have nothing to do with instruction or with educational institutions.

Suppose, however, that research and teaching are complementary activities, in the sense that a little more instructional activity produces a little *more* research, and vice versa. Some educators have claimed that such would be the case for a faculty member who was spending all his time doing one thing. For example, the full-time teacher might do better (equals "more") teaching were he to do some research. The research institute scribbler might do more effective research were he to spend some time teaching (Nerlove, 1972). If this were so, a government interested in investing in research (to insure that its externalities are realized) might find it advantageous to subsidize instruction in some instances. Moreover, institutions that are organized to take advantage of such complementarities (universities) become a proper object of governmental concern (Bowen, 1971).

To some extent the government recognizes complementarities by

awarding indirect cost allowances on government research contracts that, in part, are actually used for support of instructional activities (Mundel, 1971). But it is not entirely clear that this is the best method to encourage complementarities to develop.

The whole area of the relationship between research and teaching and its implications for federal support is underresearched. So is the question of which institutional configuration results in the best research for the government dollar. (All universities? Teaching separate from research? Necessary size of a department for efficient research?) Until these questions are resolved, at least some weight should be given to the claims of complementarity and of the need to support the university-type institution.

Manpower

The American economy allocates college-trained manpower to occupations mainly through movements in relative wages. When shortages develop in a field, wages rise, and students respond to such changes by choosing major fields. The system works amazingly well (Freeman, 1971).

In two instances, however, the government may wish to intervene in the normal market process. First, sometimes there is reason to believe that (a) the market response would be very slow (for example, if the shortage field is a new one, and academic departments are not organized to train new entrants), and (b) the social cost of a slow adjustment process may be very high. Second, in some cases the government itself may be the major employer; it may be cheaper to train (or pay for the training of) people in the desired field than to change compensation rates and wait for the applicants to appear.

A large number of federal programs can potentially be justified on these grounds: all the fellowships in specific fields, training grants, and the like. A major difficulty with this class of programs is that no accountability system is built into them, and programs have a tendency to take on a life of their own, beyond any reasonable period of shortage.

Special manpower needs are a legitimate area for government intervention. But the primary system for allocating people to occupations should be the free labor market. Special manpower programs should be subjected to initial and continuing evaluation and comparison to market alternatives.

Evaluating the Case against Public Intervention

Standing against the long list of mainly theoretical reasons for public intervention is a long list of well-documented demonstrations that the

private return on higher education is about equal to the private return on business investment in the United States. Without compelling demonstrations of the importance of the barriers, imperfections, and externalities outlined in this paper, many have argued that sound policy should involve a move toward withdrawal of public subsidies. (See Schultz, 1971, for a good summary of the evidence.)

But the empirical evidence on private returns is not quite as convincing as its producers would have us believe.

- Most of the studies use single-period, cross-section data: They base rate of return estimates on the earning experiences of different people at a point in time, while policy prescriptions demand that we know what would happen to a given cohort of people over time. Thus, cross-sectional analysis can be misleading. (See Taubman & Wales for one of the few longitudinal studies.)
- Earnings are much too narrow a definition of even private benefits. These should include at a minimum the nonpecuniary benefits of occupations that higher education allows one to enter and the consumption benefits of the college years themselves. In addition, the data need correction for the different amounts of leisure enjoyed by people of different educational attainments, as well as the more obvious ability–race–sex–region corrections. Although some of these corrections have been made in all studies, there is no body of data rich enough to permit all confounding variables to be controlled simultaneously.
- Empirical studies rarely make explicit the aggregate production function relationships that must be assumed (or can be inferred from the returns studies). Some investigators have expressed doubt that the education return studies are consistent with the aggregative studies (Thurow, 1972).

Conclusion

Policies cannot wait for all the returns to come in. Fortunately, there are good *a priori* reasons for and no empirical evidence against at least the following policy thrusts:

- Toward targetting existing subsidies at both federal and state levels on low-income students
- Toward encouraging research and innovation in higher education
- Toward building a healthier higher education industry by encouraging moves toward relative prices that reflect relative costs and by improving management

All of these goals can be pursued as the various claims for greater public intervention are sorted out, tested, experimented with, and studied. Answers to some of the questions may never be available to policy makers. But that does not mean that they should dismiss requests for support for lack of proof; it means they must learn to live with risk and uncertainty.

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